

REMARKS

Claims 1-6, 9-15 and 17 remain pending in the present application. No claims have been amended, canceled or added. Applicants respectfully request further examination of the application and reconsideration of the rejections in view of the following.

Rejections Under 35 U.S.C. § 103(a) – Claims 1-6, 9-15 and 17

Claims 1-6, 9-15 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,564,347 to Mates (hereinafter *Mates*). Applicants respectfully traverse this rejection for at least the following reasons.

As the Examiner acknowledges with regard to claims 1-3 and 6, *Mates* does not disclose that “a control input to the integrated circuit controls whether the first or second set of routines are executed,” or with regard to claims 9-13, 15 and 17, “applying a control signal to the integrated circuit; and selecting the test routines according to the control signal.” However, the Examiner appears to contend that these features would have been obvious to a person of ordinary skill in the art in view of certain statements in *Mates*. Applicants respectfully disagree with this contention as well as with the Examiner’s assertion that *Mates* discloses, with regard to claims 1-3 and 6, “the internal memory contains a first set of test routines for execution during a production test of the integrated circuit and a second set of test routines for execution during an in-product test of the integrated circuit,” and with regard to claims 9-13, 15 and 17, “test routines stored in the integrated circuit” that can be selected using the control signal.

The Examiner cites col. 7, lines 54-60 and col. 2, lines 67-88 of *Mates* as disclosing that the memory contains test routines (and with specific regard to claims 1-3 and 6, that col. 7, lines 54-60 disclose a first set of test routines for use during production, and col. 2, lines 67-68 disclose a second set of test routines for use during in-product test). Applicants respectfully disagree. Rather, col. 7, lines 54-60 of *Mates* state only:

Using embedded [Logic Analyzer Units] in integrated circuits in accordance with the invention, integrated circuit manufacturers and testers may be able to realize significant savings related to test equipment by obviating a need for costly, external logic analyzers. As a need for external logic analyzers is reduced, so are the costs associated with maintenance, repair, etc.

The on-chip LAU of various embodiments may further enable each chip on which it is including to analyze itself. Built-In Self-Test (BIST) routines may be enhanced to contain tests that use the functions and capabilities of the embedded LAU as described above.

And col. 2, lines 67-68 of *Mates* state only that: “Additionally, by being programmable, test routines can be added after manufacture of the integrated circuit to be tested.” Applicants submit that while col. 7, lines 54-60 indeed relate to testing by the IC manufacturer, and col. 2, lines 67-68 relate in some manner to post-manufacture testing (though it is far from clear that such post-manufacture testing is “in-product”), *nowhere is it stated or suggested that routines used for production testing and routines used for in-product testing (even assuming for the sake of argument that Mates’ reference to “after manufacture” means “in-product”) ever exist simultaneously in the IC memory, and that one can be selected over the other by applying a control input*. Indeed, the routines are mentioned in paragraphs that are totally unrelated to each other. Moreover, it is entirely possible that “after manufacture” in col. 2, line 67 refers to production testing by the IC manufacturer or even by a purchaser of the IC *before the IC is incorporated into a product*. However, even assuming for the sake of argument that one routine is executed during production and the other during an in-product test, it is reasonable to believe from the above-quoted paragraphs that storing the second routine in the IC after production for in-product test *overwrites* the first routine that was stored in the IC during production. As production is finished at the time the second routine is loaded, there would be no reason to continue to maintain the first routine in memory.

Similarly, col. 7, line 61 – col. 8, line 8 of *Mates*, also cited by the Examiner, may refer to in-product Built-In Self-Test (BIST) using routines “downloaded over a network to a system including the host integrated circuit chip ...,” but nothing in that section of *Mates* states or suggests that such routines exist simultaneously in memory with routines that were previously loaded in memory for testing during production, and wherein a control signal can be used to select either the former routines or the latter routines for execution.

Although the Examiner also points to a statement in *Mates* that a “variety of available signal types provides the LAU 105 with flexibility in terms of the types of tests that can be performed,” Applicants submit that this statement does not in any way suggest the simultaneous storage of more than one test routine in the integrated circuit and use of a control signal to select one of them for execution, let alone that a first routine is for use during production and a second routine is for use during in-product test.

Yet, despite the lack of any teaching or suggestion of simultaneous storage of more than one selectable test routine in an integrated circuit, the Examiner makes the conclusory statement that “[t]herefore it would have been obvious . . . based on the teachings of *Mates* to

provide a first set of routines for execution during a production test of the integrated circuit and a second set of test routines for execution during an in-product test of the integrated circuit and a control signal input to the integrated circuit to control whether the first or second set of routines are executed.” Applicants respectfully submit that this statement is entirely conclusory; it does not logically flow what is actually disclosed in *Mates* or the knowledge of one skilled in the art. The Examiner has not stated any reason why a person of ordinary skill in the art would make the leap from the *Mates* system to that which is set forth in Applicants’ claims.

For at least the foregoing reasons, the invention as set forth in claims 1-6, 9-15 and 17 would not have been obvious to a person of ordinary skill in the art, and it is respectfully requested that the rejection be reconsidered and withdrawn.

CONCLUSION

In view of the foregoing, Applicants respectfully submit that all grounds of rejection have been successfully traversed and/or overcome, and that the application is now in condition for allowance. Should the Examiner have any comments regarding the Applicants’ response or believe that a teleconference would expedite examination of the pending claims, Applicants request that the Examiner telephone the undersigned attorney.

Respectfully submitted,

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